PROPOSED WATER QUALITY/WATERSHED SUBOBJECTIVE

This document describes the strategic targets for Subobjective 2.2.1, Water Quality/ Watersheds, contained in the draft FY 2006 – 2011 EPA Strategic Plan, May 2006, published for review and comment. See http://www.epa.gov/ocfopage/plan/06draftarch.htm for the complete Strategic Plan.

The strategic architecture for the Watershed subobjective in the current FY 2003 – 2008 strategic plan is Attachment A, p. 14.

Changes from the February 2006 draft strategic architecture are in Attachment B, pp. 15-16.

Goal 2: Clean and Safe Water.

Ensure drinking water is safe. Restore and maintain oceans, watersheds, and their aquatic ecosystems to protect human health, support economic and recreational activities, and provide healthy habitat for fish, plants, and wildlife.

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Objective 2.2: Protect Water Quality. Protect the quality of rivers, lakes, and streams on a watershed basis and protect coastal and ocean waters.

> **Sub-objective 2.2.1: Improve Water Quality on a Watershed Basis.** By 2012, use pollution prevention and restoration approaches to protect the quality of rivers, lakes, and streams on a watershed basis.
>
> Strategic Targets:

- **(L)**[*] By 2012, attain water quality standards for all pollutants and impairments in more than 2,250 water bodies identified in 2002 as not attaining standards (cumulative). (2002 Baseline: 37,978 water bodies identified by states and tribes as not meeting water quality standards. Water bodies where mercury is among multiple pollutants causing impairment may be counted toward this target when all pollutants but mercury attain standards, but must be identified as still needing restoration for mercury; 1,703 of the 37,978 impaired water bodies are impaired by multiple pollutants including mercury.)

- **("Y")** By 2012, remove at least 5,200 of the specific causes of water body impairment identified by states in 2002. (2002 Baseline: estimate of 64,250 specific causes of water body impairment identified by states and tribes.)

[*] Letters L, "Y", etc. are working designations for ease of reference by the Subobjective Team. The final Plan will not use letter designations. Measures L, N, and O are designations from an internal EPA tracking system for the current Strategic Plan.

- **("W")** By 2012, improve water quality conditions in 213 impaired watersheds nationwide using the watershed approach (cumulative). (2002 Baseline: zero watersheds improved of an estimated 40,000/50,000 impaired watersheds with one or more water bodies impaired. The watershed boundaries for this measure are those established at the "12-digit" scale by the U.S. Geological Survey (USGS). Watersheds at this scale average between 16 and 36 square miles in size. "Improved" means that one or more of the impairment causes identified in 2002 are removed for at least 40 percent of the impaired water bodies or impaired miles/acres; or there is significant watershed-wide improvement, as demonstrated by valid scientific information, in one or more water quality parameters or related indicators associated with the impairments.)

- **("P")** By 2012, the condition of the nation's wadeable streams does not degrade (i.e., there is no statistically significant increase in the percent of streams rated "poor" and no statistically significant decrease in the streams rated "good"). (2006 Baseline: Wadeable Stream Survey identifies 28 percent of streams in good condition; 25 percent in fair condition; 42 percent in poor condition.)

- **(N)** By 2012, improve water quality in Indian country at not fewer than 10 percent of baseline monitoring stations in tribal waters (i.e., show improvement in one or more of seven key parameters: dissolved oxygen, pH, water temperature, total nitrogen, total phosphorus, pathogen indicators, and turbidity). (2006 Baseline: 35 tribes provide water quality data to EPA; number of monitoring stations to be determined by August 2006.)

- **(O)** By 2015, in coordination with other federal partners, reduce by 50 percent the number of homes on tribal lands lacking access to basic sanitation. (2003 Baseline: Indian Health Service data indicate that 8.4 percent of homes on tribal lands lack access to basic sanitation [i.e., 26,777 homes of an estimated 319,070 homes lacking access].)

MEASURE L – FULL RESTORATION

PROPOSED MEASURE

- By 2012, attain water quality standards for all pollutants and impairments in more than 2,250 water bodies identified in 2002 as not attaining standards (cumulative). (2002 Baseline: 37,978 water bodies identified by states and tribes as not meeting water quality standards. Water bodies where mercury is among multiple pollutants causing impairment may be counted toward this target when all pollutants but mercury attain standards, but must be identified as still needing restoration for mercury; 1,703 of the 37,978 impaired water bodies are impaired by multiple pollutants including mercury.)

This measure counts water bodies (segments) restored. Two impairments restored on the same water body (assuming there were no other impairments on that water body) would count as one water body.

This measure is designed to recognize the widespread success of the Surface Water Program in restoring water quality. It holds constant the overall, historic backlog of waters known to be impaired in 2002 and focuses on the rate at which 303(d) listed waters are improving their condition to meet water quality standards. The measure is calculated by comparing the baseline of state- or EPA-listed waters in 2002 to the current list of impaired segments submitted in state 303(d) lists every two years (next lists are due in 2006). Waters that have been "delisted" from the baseline can be counted towards meeting this water quality restoration goal. If a water body is impaired by multiple causes, it cannot be counted as meeting this measure until all those water quality standards are met, except as noted for mercury.

Baseline: 37,978 water bodies identified by states or EPA as not meeting water quality standards. The baseline includes all waters in categories 5, 4a, 4b, and 4c in 2002.[*] Of these waters, 1,703 are impaired by multiple pollutants including mercury.[†] Impairments identified after 2002 are not considered in counting waters restored under this measure; such impairments will be considered when revising this measure for future updates of the Strategic Plan.

Target for 2012: 2,250, based on Regional discussions with states during the comment period on the strategic architecture.

[*] From NTTS, 4-3-06: Category 5, 34,219 303(d)-listed segments generally based on 2002 list cycle, but includes 1 state (CO) and 3 territories (AS, CNMI, GU) from the 1998 cycle; Category 4a, 3,655; Category 4b, 41; and Category 4c, 63.

[†] From NTTS, 4-3-06: 8,204 waters in the baseline were impaired by mercury; composed of 6,501 waters where mercury was the sole cause of impairment, and 1,703 waters where mercury was among two or more causes.

Definitions:

- *Impairment* refers to the "impairment cause" in state-reported data, stored in NTTS or ADB. Any water body listed as impaired must have an impairment cause entered.
- *Attain water quality standards for all pollutants and impairments* means that the water body is no longer impaired for any of the reasons identified in 2002, as reflected in subsequent state-submitted assessments and EPA-approved 303(d) lists. Pollutants or impairments that are identified subsequently in later assessments and lists are not considered for this measure. EPA will consider adjusting the baseline to a different base year in future Strategic Plans. Water bodies where mercury is among multiple pollutants causing impairment may be counted toward this target when all pollutants but mercury attain standards. Of waters restored under this measure, EPA will continue to identify and track separately those waters still needing restoration for mercury. Waters that are moved off the 303(d) list for the following reasons can be counted towards meeting this measure:

    1. Water no longer is impaired because of restoration activities – meets water quality standards.
    2. New monitoring data show water meets water quality standards; reason for recovery unspecified.
    3. Original basis for 303(d) listing is incorrect; water meets water quality standards.
    4. Change in water quality standards assessment methodology, water meets water quality standards.
    5. Water originally listed as threatened but has continued to meet water quality standards and is no longer considered threatened.
    6. Change in water quality standards; data show that water meets new water quality standards.

In Integrated Report terminology, to count toward this measure a water body must be placed in Categories 1 or 2 for <u>all the pollutants and impairments</u> that were identified in 2002 as not attaining standards.[*] If any 2002 pollutants and impairments belong in Categories 4 or 5, the water cannot be counted. The water body also cannot be counted if it is moved to Category 3 for the 2002 impairment(s). Impairments identified after 2002 are not considered in counting waters restored under this measure.

Database: Will use EPA's National TMDL Tracking System (NTTS), and Assessment Data Base (ADB), with geo-referencing at least 90% complete by mid-2006 for establishing the baseline and for tracking results.

[*] Integrated Report "Categories" (e.g., Categories 1, 2, 3, 4a, 4b, 4c, and 5) are defined in *Guidance for 2006 Assessment, Listing, and Reporting Requirements Pursuant to Sections 303(d), 305(b) and 314 of the Clean Water Act*, EPA, July 29, 2005, available at http://www.epa.gov/owow/tmdl/2006IRG/report/2006irg-report.pdf.

MEASURE "Y" – PARTIAL RESTORATION

PROPOSED MEASURE

- By 2012, remove at least 5,200 of the specific causes of water body impairment identified by states in 2002. (2002 Baseline: estimate of 64,250 specific causes of water body impairment identified by states and tribes.)

This measure counts impairments restored. Two impairments restored on the same water body would count as two toward the measure.

Baseline: 64,250 waterbody impairments[*]. Baseline includes impairments in categories 5, 4a, 4b, and 4c segments as of 2002.

Target for 2012: 5,200 impairments removed, based on Regional discussions with states and tribes during the comment period on the strategic architecture.

Definitions:

- *Impairment* refers to the "impairment cause" in state-reported data, stored in NTTS or ADB. Any water body listed as impaired must have an impairment cause entered.
- *Remove* means the original specific cause of impairment listed by the state or EPA is no longer impairing the water body, as reflected in state-submitted assessments and EPA-approved 303(d) lists.

Database: will use NTTS and ADB, with geo-referencing at least 90% complete by mid-2006 for baseline and for tracking results.

[*] From NTTS, 4-3-06: Category 5, 57,581; Category 4a, 6,382; Category 4b, 54; Category 4c, 133.

MEASURE "W" – WATERSHED MEASURE

PROPOSED MEASURE

- By 2012, improve water quality conditions in 213 impaired watersheds nationwide using the watershed approach (cumulative). (2002 Baseline: zero watersheds improved of an estimated 40,000/50,000 impaired watersheds with one or more water bodies impaired. The watershed boundaries for this measure are those established at the "12-digit" scale by the U.S. Geological Survey (USGS). Watersheds at this scale average between 16 and 36 square miles in size. "Improved" means that one or more of the impairment causes identified in 2002 are removed for at least 40 percent of the impaired water bodies or impaired miles/acres; or there is significant watershed-wide improvement, as demonstrated by valid scientific information, in one or more water quality parameters or related indicators associated with the impairments.)

This measure will establish and demonstrate a capacity for watershed-scale restoration and protection throughout the country using the "watershed approach." It is <u>not</u> designed to be a measure of what portion of the 12-digit watersheds in the country have improved or meet water quality standards. See below for a description of how the program will focus its attention on these watersheds.

Baseline: an estimated 40,000 – 50,000 USGS 12-digit watershed with one or more impaired water bodies, as identified by states and EPA in the baselines for measures L and "Y". There is a universe of approximately 160,000 12-digit watersheds in the United States.

Definitions:

- The *watershed approach* is a coordinating process for focusing on priority water resource problems that:
    - Is focused on hydrologically defined areas,
    - Involves key stakeholders,
    - Uses an iterative planning or adaptive management process to address priority water resource goals, and
    - Uses an integrated set of tools and programs.

  Functionally, the watershed approach is a problem-solving tool for protecting water quality and aquatic resources. It recognizes that factors affecting the health of our nation's waters should be understood within their watershed context. It includes assessment of relevant watershed processes and socioeconomic factors, identification of priority issues and most promising corrective actions, involvement by affected parties throughout the process, and implementation at the required scale.
- *Watershed* means a watershed at the 12-digit scale, as determined by (a) the draft or final Watershed Boundary Dataset (WBD), or (b) state or Regionally defined boundaries of comparable scale. Option (b) is provided since some waters, such as coastal and estuary waters, fall outside the WBD. Although watersheds at the 12-

digit scale are technically termed "sub-watersheds" by USGS, the Strategic Plan will use the term "watershed" for simplicity.

- *Improved* means either that:
    - One or more of the waterbody/impairment causes identified in 2002 are removed, as reflected in EPA-approved state assessments, for at least 40% of the impaired water bodies or impaired stream miles/lake acres in the watershed; OR
    - There is significant watershed-wide improvement, as demonstrated by valid scientific information, in one or more water quality parameters or related indicators associated with the impairments. See Attachment C for Guidance on Reporting Significant Watershed-wide Improvement.

Target for 2012: 213 watersheds, based on Regional discussions with states during the comment period on the strategic architecture.

EPA envisions that:

Focused application of the watershed approach…	…in watersheds at multiple scales accounting for more than 213 12-digit watersheds…	…identified in lists maintained by the region and states…

…will achieve…

…water quality improvement by 2012…	…in a straw target expressed as 213 12-digit watersheds…	…estimated in regional numeric aggregations from the above lists.

Note that this measure would count an "improved" watershed only if it is identified in advance on the lists above. The measure will not count "incidental" watersheds improving that have not received focused application of the watershed approach.

EPA regions will work with states to identify the watersheds in which they will be focusing application of the watershed approach to attain this measure. Since the measure is a demonstration of our commitment to implementing the watershed approach, EPA and states will need to be specific on where we are applying it to improve water quality: that is, we need to identify watersheds, in lists maintained by the regions and states.

To accomplish the goal of watershed improvement, the regions and states will need to focus on considerably more watersheds than the 2012 target of 213 for two primary reasons. First, although water quality in some watersheds can be improved in the near term (5 years), for many watersheds the time frame for improvement can be much longer than the time frame of this strategic plan. For the watershed approach to work we must not focus only on the near term goals but also on the long-term objectives to restore water quality. Many watersheds identified as priorities by the regions and states will not be

restored in the near term but must be focused on now and in the decades ahead to restore water quality. Second, because it is very difficult technically and programmatically to assure that a particular watershed can be “improved” within a specific time period the number of watersheds on the list maintained by the regions and states will be considerably greater than the number of 2012 targets.

EPA envisions flexibility on two fronts for implementing this approach. First, EPA and/or the states may invest in additional watersheds over time, so regions should be able to add to the larger list of watersheds in which we are focusing our watershed approach efforts. Second, because it is somewhat speculative to project that a watershed will indeed improve, EPA expects that watersheds may be removed from the list – for example, if it becomes apparent that a Region and state will not begin applying a focused watershed approach as originally envisioned – and replaced with other watersheds where efforts are projected to be more successful. The measure thus envisions "living" lists of watersheds.

DEVELOPMENTAL MEASURE

EPA intends to further improve this measure in succeeding strategic plans to refine and expand incremental measures of water quality “improvement” in watersheds, and possibly to reflect maintenance of water quality.

MEASURE "P" – PROBABILISTIC MEASURE

PROPOSED MEASURE

- By 2012, the condition of the nation's wadeable streams does not degrade (i.e., there is no statistically significant increase in the percent of streams rated "poor" and no statistically significant decrease in the streams rated "good"). (2006 Baseline: Wadeable Stream Survey identifies 28 percent of streams in good condition; 25 percent in fair condition; 42 percent in poor condition.)

Baseline: The 2006 baseline reflects the draft results of the Wadeable Streams Assessment, published in April 2006.[*] EPA and its collaborating partners plan to conduct similar assessments of other types of waterbodies (e.g., lakes, large rivers, and wetlands) in the future, with the goal of producing updated assessments for each type of waterbody every five years. These repeated studies will ensure that the public remains informed as to whether the collective efforts to protect and restore the nation's waters are meeting with success.

The next wadeable streams assessment is planned for completion in time to assess results by 2012. It is currently planned to be an independent statistical sample, though it could be redesigned to include a partial longitudinal study of the same streams sampled in 2006. Targets and results will be reported nationally with a confidence interval of plus or minus 3.5%, and by EPA region at plus or minus 10-15%.

Target for 2012: "Will not degrade" means that in the Wadeable Streams Survey to be completed in 2011, there will be:

- No statistically significant increase in the national proportion of wadeable streams in the category of Poor compared to the 2006 results, AND
- No statistically significant decrease in the national proportion of wadeable streams in the category of Good.

Definitions: "Good," "Fair," or "Poor" are not related to water quality standards. They are determined by national assessment protocols, comparing conditions in sampled streams with conditions in reference streams representing "least disturbed" conditions in the same general ecological area.

DEVELOPMENTAL MEASURE

EPA intends to continue development of national measures for additional types of water bodies in future Strategic Plans, beginning with lakes based on the planned Lakes Survey.

[*] Draft "Wadeable Streams Assessment: A Collaborative Survey of the Nation's Streams," EPA 841-B-06-002, April 2006. Available at http://www.epa.gov/owow/streamsurvey/.

MEASURE N – TRIBAL WATER QUALITY

PROPOSED MEASURE

- By 2012, improve water quality in Indian country at not fewer than 10 percent of baseline monitoring stations in tribal waters (i.e., show improvement in one or more of seven key parameters: dissolved oxygen, pH, water temperature, total nitrogen, total phosphorus, pathogen indicators, and turbidity). (2006 Baseline: 35 tribes provide water quality data to EPA; number of monitoring stations to be determined by August 2006.)

Baseline: EPA is working with its tribal partners to assemble a list of water quality trend monitoring stations that could provide information for this measure. EPA regions have set a target for 35 tribes receiving funding under Section 106 of the Clean Water Act to be providing water quality data in a format accessible for storage in EPA's data system by the end of FY 2007. Water quality monitoring stations operated by these tribes could provide the nucleus for the baseline of this measure.

Target for 2012: 10% of stations in the baseline would be able to show improvement.

Definitions:

- *Seven key parameters* means seven of nine parameters identified in EPA's draft section 106 program guidance for tribes: dissolved oxygen, pH, water temperature, and turbidity. This draft guidance is available for public comment at http://www.epa.gov http://www.epa.gov/owm/cwfinance/106tgg07.htm.
- *Improved* means that (a) at least one of the seven key parameters shows a significant improvement in quality, and (b) none of the seven parameters shows a significant decline. EPA will provide guidance to the tribes in assessing significant parametric improvement or decline.

DEVELOPMENTAL MEASURE

EPA intends to further improve this measure in succeeding Strategic Plans to phase in the monitoring and assessment work of tribes as they implement the Section 106 Guidance for Tribes.

MEASURE O – Tribal Access to Basic Sanitation

PROPOSED MEASURE

- By 2015, in coordination with other federal partners, reduce by 50 percent the number of homes on tribal lands lacking access to basic sanitation. (2003 Baseline: Indian Health Service data indicate that 8.4 percent of homes on tribal lands lack access to basic sanitation [i.e., 26,777 homes of an estimated 319,070 homes lacking access].)

By itself, EPA lacks the funding that is necessary to meet the United Nations Millennium Development Goal of reducing by 50 percent the number of homes in Indian Country that lack access to safe drinking water and basic sanitation. EPA is working with other federal agencies to develop a coordinated approach to improve access to safe drinking water and basic sanitation in Indian Country. In addition, it should be noted that the Indian Health Service database of homes lacking access fluctuates every year given the following variables: new needs, new homes, lifecycle costs, homes where water and wastewater facilities fall out of compliance, new environmental regulations, construction inflation, and population growth.

Baseline: 26,777 homes on tribal lands lacking access to basic sanitation, based on the Indian Health Service (IHS) results for the current Fiscal Year. There are 319,070 total homes on tribal lands, based on the IHS results for FY 2003. The data source is the IHS Sanitation Deficiency System (SDS) database in STARS.

Definition:
Lacking Access to Basic Sanitation: IHS Initial Deficiency Levels 4 and 5.

Targets:

FY 2007 Target: 7% of homes lacking access to basic sanitation (22,335 homes lacking access out of 319,070 total homes on tribal lands).

FY 2015 Target: 4.2% of homes lacking access to basic sanitation (13,401 homes lacking access out of 319,070 total homes on tribal lands).

Attachment A

Watershed Subobjective in the EPA FY 2003 – 2008 Strategic Plan

Sub-objective 2.2.1: Improve Water Quality on a Watershed Basis. By 2008, use both pollution prevention and restoration approaches, so that:

- **2.2.1a –** In 600 of the Nation's watersheds, water quality standards are met in at least 80 percent of the assessed water segments (2002 Baseline: 453 watersheds of the total 2,262 U.S. Geological Survey [USGS] cataloguing unit scale watersheds across the Nation.)
- **2.2.1b** – In 200 watersheds, all assessed water segments maintain their quality and at least 20 percent of assessed water segments show improvement above conditions as of 2002. (2002 Baseline: 0 USGS cataloging unit scale watersheds.)

Strategic Targets:

- **L** By 2012, fully attain water quality standards in over 25 percent of those water bodies identified in 2000 as not attaining standards, with an interim milestone of restoring 5 percent of these waters by 2006. (2002 Baseline: 0 percent of the 255,408 miles and 6,803,419 acres of waters on 1998/2000 lists of impaired waters developed by states and approved by EPA under section 303(d) of the Clean Water Act.)

- **M** By 2008, reduce levels of phosphorus contamination in rivers and streams so that phosphorus levels are below levels of concern established by USGS or levels adopted by a state or authorized tribe in a water quality standard in:
  – 55 percent of test sites for major rivers (1992-1998 Baseline: 50 percent.)
  – 38 percent of test sites for urban streams (1992-1998 Baseline: 33 percent.)
  – 30 percent of test sites for farmland streams (1992-1998 Baseline: 25 percent.)

- **N** By 2008, improve water quality in Indian country at not fewer than 90 monitoring stations in tribal waters for which baseline data are available (i.e., show at least a 10 percent improvement for each of four key parameters: total nitrogen, total phosphorus, dissolved oxygen, and fecal coliform). (2002 Baseline: four key parameters available at 900 sampling stations in Indian country.)

- **O** By 2015, in coordination with other federal partners, reduce by 50 percent the number of households on tribal lands lacking access to basic sanitation. (2000 Baseline: Indian Health Service data indicating that 71,000 households on tribal lands lack access to basic sanitation.)

Attachment B

Changes from February 2006 to May 2006

OBJECTIVE 2.2: PROTECT WATER QUALITY. Protect the quality of rivers, lakes, and streams on a watershed basis and protect coastal and ocean waters.

Sub-objective 2.2.1: Improve Water Quality on a Watershed Basis. By 2012, use ~~both~~ pollution prevention and restoration approaches to protect the quality of rivers, lakes and streams on a watershed basis~~, as measured by the strategic targets described below~~.

Strategic Targets:

(L) By 2012, attain water quality standards for all pollutants and impairments in ~~over 3,700~~ more than 2,250 water bodies identified in 2002 as not attaining standards (cumulative). (2002 Baseline: ~~35,208~~ 37,978 water bodies identified by states and tribes as not meeting water quality standards. Water bodies where mercury is among multiple pollutants causing impairment may be counted toward this target when all pollutants but mercury attain standards, but must be identified as still needing restoration for mercury; ~~1,768~~ 1,703 of ~~these~~ the 37,978 water bodies impaired by multiple pollutants including mercury; baseline to be updated in April 2006.)

("Y") By 2012, remove at least ~~8,500~~ 5,200 of the specific causes of waterbody impairment identified by States in 2002. (2002 Baseline: estimate of ~~57,948~~ 64,250 specific causes of waterbody impairment identified by states and tribes; baseline to be updated by April 2006.)

("W") By 2012, improve water quality conditions in ~~250~~ 213 impaired watersheds nationwide using the watershed approach (cumulative). (2002 Baseline: zero watersheds improved of an estimated 40,000 – 50,000 impaired ~~USGS 12 digit~~ watersheds with one or more water bodies impaired. The watershed boundaries for this measure are those established at the "12-digit" scale by the U.S. Geological Survey (USGS). Watersheds at this scale average between 16 and 36 square miles in size. Improved means that one or more of the impairment causes identified in 2002 are removed for at least 40 percent of the impaired waterbodies or impaired miles/acres; or there is significant watershed-wide improvement, as demonstrated by valid scientific information, in one or more water quality parameters or related indicators associated with the impairments.) ~~estimate of impaired watersheds to be updated in April 2006.)~~

("P") By 2012, the condition of the nation's wadeable streams does not degrade (i.e., there is no statistically significant increase in the percent of streams rated "poor" and no statistically significant decrease in the streams rated "good"). (2006 Baseline: Wadeable Stream Survey identifies ~~XX~~ 28 percent of wadeable streams in good condition; ~~XX~~ 25 percent in fair condition; ~~XX~~ 42 percent in poor condition~~; Wadeable Stream Survey results expected March 2006~~.)

(N) By 2012, improve water quality in Indian country at not fewer than 10 percent of baseline monitoring stations ~~for~~ in tribal waters (i.e., show improvement in one or more of ~~four~~ seven key parameters; dissolved oxygen, pH, water temperature, total nitrogen, total phosphorus, pathogen indicators, and turbidity). (2006 Baseline: 35 tribes provide water quality data to EPA; number of monitoring stations to be determined by August 2006.) ~~(2004 Baseline: an estimated 743 stations in EPA's STORET data system in Indian Country, or within 1,500 meters of Indian Country, that monitored for key parameters at least once between 1995 – 2005.)~~

(O) By 2015, in coordination with other federal partners, reduce by 50 percent the number of homes on tribal lands lacking access to basic sanitation. (2003 Baseline: Indian Health Service data indicating that 8.4 percent of homes on tribal lands lack access to basic sanitation [i.e., 26,777 homes of an estimated 319,070 homes lacking access].)

Attachment C

Guidance on Reporting Significant Watershed-Wide Improvement (under Measure W)

Measure W Text (Significant Watershed-wide Improvement portion underlined)

> By 2012, improve water quality conditions in 213 impaired watersheds nationwide using the watershed approach. (cumulative) (2002 Baseline: zero watersheds improved of an estimated 40,000 - 50,000 impaired USGS 12 digit watersheds with one or more waterbody impaired; improved means that one or more of the impairment causes identified in 2002 are removed for at least 40% of the impaired waterbodies or impaired miles/acres; or there is significant watershed-wide improvement, as demonstrated by valid scientific information, in one or more water quality parameters or related indicators associated with the impairments)

Guidance for Reporting Watershed-wide Improvement

The second definition of improvement under Measure W, underlined above, is an optional reporting mechanism for demonstrating progress at the watershed scale. It is designed to track improvements occurring across the watershed that have not yet resulted in a delisting.

To meet this second definition of improved, a watershed assessment must demonstrate evidence of a positive trend/change that accounts for a significant portion of the nonattainment gap for the key parameter(s)/indicator(s).

Two options are available for demonstrating this improvement: using accepted statistical procedures, or evaluating and documenting multiple lines of evidence. The baseline for the trend or change may start as far back as 1992. The evidence must be supported by an analytical plan, and may be peer-reviewed within EPA.

I. Improvement must be shown using one of the following two processes.

A. Using statistical procedures to demonstrate that significant improvement has occurred with a 90 percent or greater level of confidence. For purposes of this measure, **"**statistical procedures" are those procedures capable of showing statistically significant change in the water quality parameters or related indicators (e.g. T-tests, regression analysis, etc). Supporting documentation should describe the environmental significance of any reported changes in water quality.

B. Using a multiple lines of evidence approach to demonstrate watershed improvement. A "multiple lines of evidence approach" means that the cumulative weight of several lines of evidence is used to assess whether a watershed-wide improvement has occurred. If, taken together, the amount and consistency of evidence are judged sufficient

to indicate improvement, we will count this toward the measure. Evidence must include the following:

1. Evidence of an improving trend in a water quality parameter (physical or chemical) based on empirical data which may or may not be statistically significant (e.g, descriptive statistics) but nevertheless supports improvement[*].

AND at least one of the following two lines of evidence

a. Evidence of an improving trend in a related biological indicator/index.

b. Evidence of an improving trend in water quality based on predictive/modeled data, with field level ground truthing and/or evidence of widespread, significant load reductions.

AND

2. Evidence of widespread nonpoint source or point source implementation, or other evidence of watershed implementation actions.

AND

3. No evidence of significant deteriorating trends in related parameters as called for in the analytical plan. A lack of evidence (data) for other parameters identified in the analytical plan is not adequate to support this line of evidence.

II. Documentation Requirements

To document watershed-wide improvement, information must be made available to demonstrate how either "I.A" or "I.B" above is met. If an improvement occurs in a parameter/indicator which the Region and State believe should be counted toward the measure but which differs somewhat from this guidance, an explanation must be provided in the documentation and agreed to by Headquarters.

Supporting documentation must also be provided to demonstrate that the improvement is watershed-wide, uses valid scientific information, and includes parameters or other indicators associated with the impairment (see definitions for these terms below). In addition, information provided must specifically identify:

- The watershed name/number (or other identifying information for estimated watersheds),

[*] For those impairments where a chemical or physical parameter is not relevant, such as invasive species, this line of evidence can be met by showing an improvement in the biological indicator. Information must accompany the documentation explaining why chemical/physical parameter(s) are not relevant and why the specific biological indicator was chosen.

- A clear written rationale that describes how a determination of improved water quality is supported – including the type, quality, and amount of environmental data, and decision criteria. The rationale must identify the specific parameters used to assess improvements, and must also describe the efforts made to locate and analyze any evidence of deteriorating trends in these or related parameters. Sufficient information must be provided to give readers an understanding of the approach used to assess data, but the level of detail may vary. Relevant information may be found in state-wide quality plans, standard operating procedures, project-specific quality assurance project plan, or other analogous forms. Other information may be written to describe how data were used or to document the analyses performed that demonstrate improved water quality.
- A description of the problem and the link to the impairment causes identified in 2002,
- Data used in the assessment, and
- The results which demonstrate improvement.

Acceptable documentation can be provided to the State/Region in a variety of formats and may reference readily accessible information/data as appropriate.

EPA's intention would be to make the evidence available publicly in some form. In the future, EPA anticipates that the Watershed Assessment, Tracking & Environmental ResultS (WATERS) system will provide access for much of the information/data needed to support this demonstration of watershed-wide improvement.

III. Submission and Review

Results and documentation must be reviewed and accepted by the Regional office.

The results and documentation for the first submission from each Region will be peer reviewed by an EPA panel consisting of at least two reviewers from Regions other than the reporting Region, and at least one reviewer from EPA Headquarters. Response to the peer review must accompany the documentation. The peer review panel will recommend whether to accept the watershed to be counted.

Regional consistency in reporting on the measure may also be ensured by periodic Headquarters audits of other submissions.

IV. Definitions

A. Watershed-wide means that the monitoring design is representative of spatial variability within the watershed appropriate to the water quality listing(s) within the watershed and the selected parameter(s), loadings or indices. Examples of monitoring designs that might be appropriate depending on the issue being addressed include statistically valid, watershed-scale results (e.g. census or probability-design), watershed outlet (pour point) monitoring to capture cumulative impacts, or spatially distributed sampling considered to be representative of the watershed by the State and Regional office. Documentation for the improvement would need to explain how the monitoring design is representative.

B. Valid scientific information means that information supporting watershed-wide improvements is based on objective, accepted monitoring and assessment approaches. The monitoring/assessment process includes adequate documentation of data, observations, and method of investigation sufficient to allow for independently reproducible results (such as information covered in quality assurance management plans). Data used in assessment are available either in an appropriate EPA database or other accessible formats (e.g., websites, published documents, technical memos, etc.)

C. Parameters or Related Indicators refer to:

- the specific parameters listed as causes of impairment on the 2002 303(d) list (Impairment causes identified in 2002 refer to those impairment causes that States identified in their 2002 water quality assessments and 303 (d) lists (or Integrated Reports) that qualify under Categories 5, 4a, or 4b in the Integrated Report Guidance.); or
- parameters, loadings, and/or indices directly related to the designated use impairment (e.g., phosphorus loadings might be reduced to address a low dissolved oxygen listing).